

**METHODS, SOFTWARE AND APPARATI FOR IDENTIFYING  
GENOMIC REGIONS HARBORING A GENE  
ASSOCIATED WITH A DETECTABLE TRAIT**

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Abstract of the Disclosure

10 The present invention relates to methods, software, and apparati for determining  
whether a genomic region harbors a gene associated with a detectable trait. In one embodiment,  
the present invention relates to a method of confirming that a genomic region harbors a gene  
associated with a detectable trait comprising the steps of identifying a candidate genomic region  
suspected of harboring the gene associated with the detectable trait, constructing a trait-  
associated distribution of association values using the biallelic markers in the candidate  
genomic region, identifying a plurality of biallelic markers in random genomic regions which  
are not suspected of harboring the gene associated with the detectable trait, constructing a  
15 random distribution of association values using the biallelic markers in the random genomic  
regions, comparing the trait-associated distribution of association values to the random  
distribution of association values, and determining whether the trait-associated distribution of  
association values and the random distribution of association values are significantly different  
from one another. In other embodiments, the present invention comprises software for  
20 performing the above method and devices comprising the software in a retrievable form.

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